Performance Index for the Budget Policy of Azerbaijan

The Performance Index for the Budget Policy of Azerbaijan (PIBPA) is an index, developed and calculated by me on an annual basis. Its primary purpose is to quantify and grade my assessment of budgetary policy (in a broad sense) in Azerbaijan.

I am aware that the methodology below is rudimental, but it can still give us valuable information. I have tried to keep things as simple and self-explanatory as possible.

- Section I describes the eleven indicators used in calculations.
- Section II explains the different weights assigned to each indicator, based on their relative importance and the appropriateness of their calculations.
- Section III introduces the results of the calculations, and a brief interpretation.
- Section IV provides a timeline of Azerbaijan's budgetary policymaking.
- Section V grades each year based on the quantitative result, as well as qualitative analysis that takes into account the economic climate.
- Section VI discusses the shortcomings of the methodology and the future plans for PIBPA.
- Section VII includes sources of data used in the calculations.

For the moment, the index is calculated for the years 2010 – 2020. Once the budget execution report for 2021 is available (likely in June), I will update the calculations. I took 2010 as the starting point due to the accessibility of data. Despite multiple emails and calls with the Ministry of Finance, some data for 2010 and 2011 are missing as well. More information on that is given in section VII.

For any questions, concerns, or suggestions, please do not hesitate to contact me using the contact page on the blog.

I. Methodology

Eleven indicators are utilized to calculate the value of the quantitative part. The final grades are derived from the value of the quantitative part and my qualitative assessment (more on that in Section V). I have selected these fundamental indicators to evaluate fiscal responsibility, management of natural resource revenues, sustainability of growth, combatting oil dependency, transparency, and accuracy of estimations.

One problem was that all these indicators had quite distant ranges. For instance, while the budget balance to GDP ratio only had a range of 3.24%, executed figure variation's range was 45.56%. Since including these indicators at their face value would have been practically incorrect, there was a natural need to find a common denominator. For that reason, I have used the Z values, calculated by the following formula.

$$Z = \frac{x - \mu}{\sigma}$$

where x is the value, μ is the mean, and σ is standard deviation.

Below are the indicators that I have used.

1. **Budget Balance as a Share of GDP**

This indicator is included as a measure of fiscal responsibility. In certain years, the budget experienced a budget surplus, which I regard as a favorable thing for a developing country like Azerbaijan. On the contrary, I recognize budget deficit as a disadvantageous outcome due to its adverse effects on interest rates (crowding-out effect) and public debt. I decided to look at the state budget balance specifically (as opposed to the consolidated budget balance) due to the nature of the index that I hope to build and to preserve its simplicity.

However, not all deficits are hurtful. A minor deficit (in terms of GDP, of course) that is met from domestic sources can help to promote the internal financing market. Due to that reason, for the years with a budget deficit, I have adapted the calculation of Z values slightly in order to get a more comprehensive indicator, as shown below.

$$Z = \frac{(x - \mu + 0.1\%)}{\sigma} \quad only\ when\ x\ is\ negative$$

The 0.1% represents the "acceptable level" of the budget deficit for developing the internal financing market. In the years with a budget surplus, the formula is the standard Z formula.

2. **Share of Transfers in Total Revenues**

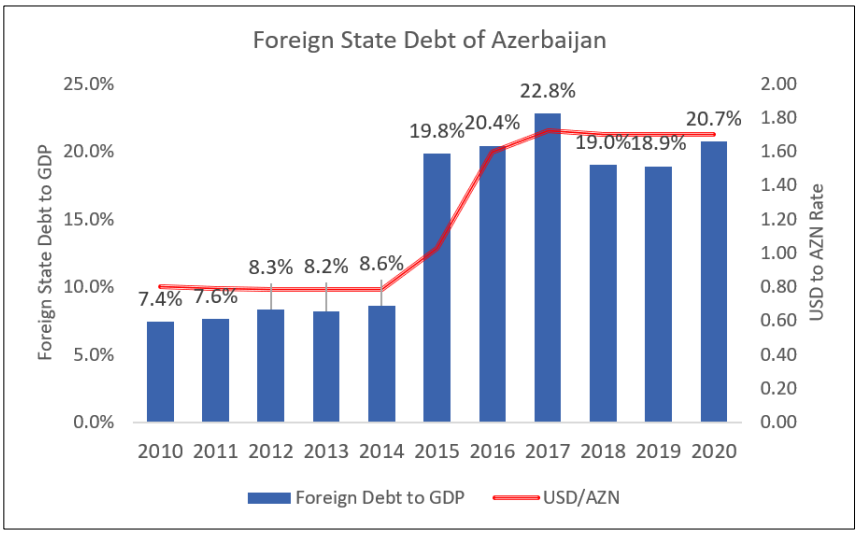
The second indicator deals with the portion of the transfers from the State Oil Fund of Azerbaijan in the total revenues of the State Budget. Larger transfers mean more dependency of the budget on the oil/gas sector.

The formula to calculate this indicator has a negative sign at the front, because, unlike the first indicator, higher values here represent an undesirable situation (in other words, the lower the share of transfers in total revenues, the higher the Z score).

3. **Foreign State Debt as a Share of GDP**

Foreign debt can be a useful instrument for governments to utilize, but often (and especially in developing countries with insufficient public oversight) it turns into a never-ending cycle of borrowing. Although Azerbaijan's foreign debt has been hovering around tolerable levels, we must keep in mind one major threat here: devaluation.

With the devaluations of 2015 (where 1 USD went from 0.78 to 1.90 AZN, and eventually settled at 1.70 AZN), Azerbaijan's foreign debt to GDP ratio almost doubled and reached 19.8%. You can plainly see how these two variables have moved in the past from the diagram below. Against all the warnings, the Central Bank of Azerbaijan continues to insist on a fixed exchange rate regime to this day. This policy creates a ticking time bomb because the country will inevitably have to rely more on external funding for deficit financing when oil prices/production ultimately slumps, which is exactly the time when Central Bank will be forced to devalue the national currency again. For that reason, even though Azerbaijan's foreign state debt to GDP ratio is lower than most other countries of the world, I deem it pivotal to keep it at that level, so that the country may still have some fiscal room in the future.



Similar to the previous indicator, the formula of the Z value is negated here.

4. **Non-oil Revenues as a Share of Total Essential Expenditures**

Azerbaijan's non-oil revenues have been on the rise for the past decade now. Albeit this is a beneficial development, we must bear in mind that in most of these years, the growth in expenditure side of the budget suppressed that of non-oil revenues. It is therefore imperative for us to judge the non-oil revenue growth in a fitting context.

In short, this indicator answers the question of "what percentage of essential expenditures can be salvaged, in case the oil/gas revenues vanished completely overnight." To understand how I calculated the essential expenditures, look at the formula and table below.

$$Essential\ Expenditures_t = \sum_{i=1}^{13} Spending\ Category_i * Essential\ Share_i$$

Spending Categories 2010 - 2019	Essential Share	Spending Categories 2020 - Onward	Essential Share
General State Services	*90%*	General State Services	*90%*
Defense	*90%*	Defense	*90%*
Judicial Authorities and Law Enforcement	*95%*	Judicial Authorities and Law Enforcement	*95%*
Education	*95%*	Education	*95%*
Healthcare	*95%*	Healthcare	*95%*
Social Protection and Welfare	*95%*	Social Protection and Welfare	*95%*
Culture, Arts, and Sports	*90%*	Culture, Arts, and Sports	*90%*
Housing and Utilities	*90%*	Housing and Utilities	*90%*
Agriculture, Forestry, Fishing, and Hunting	*90%*	Agriculture	*90%*
Industry, Construction, and Mining	*50%*	Environmental Protection	*90%*
Transport and Communications	*90%*	Economic Activities	*40%*
Economic Activities	*80%*	Other Expenses	*80%*
Other Expenses	*80%*		

Spending categories are the functional classification of the state budget of Azerbaijan. The government has settled to revise this classification in 2020 (merged some categories, and Environmental Protection was added) hence I had to include the new classification in the table as well. "Essential share" is the chunk of the expenditure that I deem as indispensable for the functioning of the state and economy. For example, if required, I believe that the government can cut back 10% of general state services or 5% of law enforcement without much economic or social repercussions.

I determined to exclude significant portions of "Industry, Construction, and Mining", "Economic Activities" (the former was later merged into "Economic Activities" in 2020), and other expenses.

"Industry, Construction, and Mining" is exclusively dominated by state-sponsored construction (the share of construction in this category is above 95%). These hefty investments are used for extravagant projects with little to no economic benefit. Just like in 2016 (where construction expenses went from 5 billion to 2.7 billion AZN in a single year), in case of serious economic hardship, construction spending is the most likely one to be scratched first. For that reason, I eliminated half of them from essential expenditures. Similarly, the vaguely defined other expenditures category has also been reduced significantly in the past (2014 – 2016), which led me to my decision of excluding 20% of this category on essential expenditures.

5. **Counter-cyclicity of Budget Expenditures**

Most of the countries, particularly those blessed with natural resources, do their best to follow a counter-cyclical fiscal policy. The underlying principle here is that the government should cut

back its spending when the economy is growing and save to the extent possible. Instead, when there is an economic slowdown, the government should boost its expenditures to support the economy and mitigate the detrimental effects of a potential recession. Following this theory also allows the economy to be less dependent on windfall natural resource revenues.

Ministry of Finance of Azerbaijan has repeatedly claimed counter-cyclical fiscal policy as one of its primary targets (recently outlined in the MTEF statement, pages 33 – 34). With this indicator, I investigated the relationship between the forecasted real GDP growth when the budget was being drafted, and the planned growth of expenditures of the state budget, adjusted for inflation.

The essence of this indicator is to measure the counter-cyclicity of the state budget expenditures according to estimations that the policymakers had at the time of drafting. For our purpose, I have categorized each year based on the forecasted GDP growth into two groups: stable growth (GDP growth more than 2%) and low growth (less than 2%). The latter group only consists of the years 2017 – 2018, when the estimated growth was at 1.0% and 1.5% respectively. For the years with a stable economic outlook, I have taken the difference between forecasted real GDP growth and the planned growth in expenditures (adjusted for inflation). Thus, a higher result here means a more counter-cyclical fiscal policy. For the years with low growth, the formula is inversed (planned expenditure growth – forecasted GDP growth).

6. **Public Sector Share in GDP**

The 2019 Fiscal Rule of Azerbaijan, which was suspended and re-introduced this year with fewer components, had a clause that I much liked. It stated that the growth of expenditures of the consolidated budget cannot grow more than 3% annually after adjusting for inflation. Such means are employed by governments around the world to prevent an ever-increasing public sector in the economy. Although the 3% rule might prove to be too tight in some specific cases, nonetheless, restricting the growth of the public sector must be considered by the policymakers.

Azerbaijan's public sector to GDP ratio was already at 28% in 2010 (close to the average for a developing country). Unnecessary spending can clearly heighten it to dangerous levels. Accordingly, in this indicator, I have calculated the Z values of the above-mentioned ratio. I used the total budget expenditures to account for the public sector. A bigger public sector share in GDP is certainly an adverse development for Azerbaijan, given its already relatively high starting point in 2010, hence the corresponding Z score has a negative sign in front of the formula.

7. **GDP Growth Forecast and Actual GDP growth**

A subject untouched by the previous indicators is the accuracy of forecasts provided by the Ministry of Economy. It is beyond dispute that having well-calculated forecasts is crucial for a

successful budgetary policy. For that reason, I decided to take the accuracy of forecasted figures into account as well.

It is true that certain unpredictable events have made estimations inaccurate in the past, such as the coronavirus pandemic in 2020. In consequence, I moved to exclude the year 2020, as it heavily skewed the results of the whole set. It makes logical sense as well because nobody could have accurately predicted the global (and still ongoing) pandemic back in the fall of 2019 when the budget of 2020 was being prepared. Hence for the year 2020, I have simply included the average of the previous three years as the final value of the indicator.

To calculate this indicator, I took the absolute value of the difference between the forecasted GDP growth in each year's state budget project, and the actual growth. Furthermore, I included an "acceptable level of error" in the calculations of this indicator which I chose as 0.2%.

Since a higher number here means a larger difference between the forecasted and the actual values, the corresponding Z value formula is negated to reflect that.

8. **Share of Fixed Capital Investments in Total Expenditures**

One of the most controversial parts of budgetary policy in Azerbaijan for the past 10-15 years has been the weight of the fixed capital investments (in other words, construction expenses) in overall expenditures. The unsustainability of these investments, famous for being subject to heavy schemes of corruption, has been outlined in numerous academic articles, policy papers, and reports of international organizations.

In this calculation, I looked at the share of construction expenses in the total expenditures of the budget. The Z value is negated.

9. **Balance of State Oil Fund Relative to its Assets**

State Oil Fund of Azerbaijan (SOFAZ) is the key macroeconomic entity for Azerbaijan's post-oil economic transition. It is tasked with imperative objectives, such as ensuring intergenerational equity, preventing oil dependency, acting as a cushion during economic downturns, and financing major national projects. All these objectives require the Fund to be financially strong in the long term. In this indicator, I have compared the balance of the State Oil Fund each year with its total assets. The larger the ratio, the better.

I am aware that including the budget of SOFAZ in this index might seem counter-intuitive at first (as SOFAZ is an independent institute on paper), however, I believe it is necessary. That is because transfers to the state budget represent by far the largest expenses of the Fund and its financial performance is directly derived from the budget planning process.

10. **Variation Between Executed Figures and the Legislation Amount**

A common and undesirable issue of budget laws in developing countries is the notable variance between the numbers in budget legislation and budget execution. This is an unhealthy practice, both for revenues and expenditures.

With this indicator, I took the difference of executed revenues and expenditures from their corresponding numbers in the legislation. More variance means less effectiveness, stability, and predictability for the state budget. Z score is negated.

At first, I was thinking to include the amended figures here for the years when the budget was amended. Yet, upon closer inspection, I observed that eight out of the eleven years used in this methodology have an amended budget. Let us say that amendments were unavoidable in the years of 2014-2016 (oil price crash)[1] and 2020 (pandemic). What about the rest? Apart from fiscal incompetence, I do not think of any other compelling reason for the amendments in 2010 - 2012 and 2016 – 2019. I believe this frequency of budget amendments is an issue on its own and subsequently decided to include the initial budget figures here to account for the redundant amendments as well. Only in the years of 2016 and 2020, I take the amended figures into account, on the grounds that in those years the amendments were inevitable and justifiable.

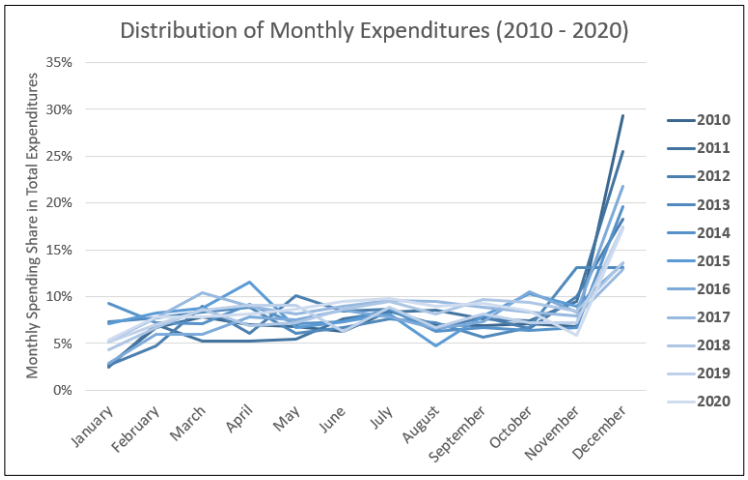
To calculate this indicator, I have used the formula below and then found their negated Z scores:

$$\frac{\|(appr\_revenues_t - exe\_revenues_t)\| + \|(appr\_expenditures_t - exe\_expenditures_t)\|}{\mu(approved\ revenues_t + approved\ expenditures_t)}$$

11. **Monthly Distribution of Executed Expenditures and Revenues**

An issue that often catches my eye in Azerbaijan is the odd timeline of executed budget expenditures (and revenues to a smaller extent). In most years, the expenditures face an abrupt hike towards the end of the fiscal year in December, as you can observe from the graph below.

[1] Interestingly, the budget was not amended in the years 2014-2015 when the oil prices plunged from 100 USD per barrel to 30 USD. One possible explanation here is that the lost revenues of the state budget due to price drop was mostly compensated by the devaluations of the national currency of manat, where its exchange rate against USD devalued by 118%.



Something odd is afoot here. Such large variation in expenditures among earlier and later months indicates wasteful spending. I have a theory that the budget allocation process is such inefficient in Azerbaijan that there is usually a surplus amount towards the end of the year. We know that the budget drafting logic relies heavily on the figures of the last fiscal year. Hence, to safeguard their funding for the upcoming year, ministries/agencies funded by the budget feel obliged to spend all the allocated money before the end of the year. Therefore, the amount that they did not spend throughout the first 11 months is bound to be "spent" in December. Considering the lack of transparency and public oversight in Azerbaijan, I deem that a serious portion of that spending in December ends up becoming a subject of corruption.

For this indicator, I calculated the standard deviation of the monthly share of expenditures and revenues first. Later averaged the two and came up with 1 value for each year. Following that, the negated Z values were calculated. A higher Z score here means monthly spending is more equally divided (or more stable).

II. Weight of Indicators

I assigned specific weight values to each indicator to differentiate them based on their relative importance and the adequacy of the calculations representing them. From the table below, you can see each indicator's weight, followed by a brief explanation for my decision. Be noted that I assigned 12.5%, 10%, and 5% for the indicators to ensure that the total sum comes to 100%.

#	Indicator	Weight	Reasoning
1	*Balance to GDP Ratio*	12.5%	Is a fundamental indicator of fiscal responsibility
2	*Share of Transfers from SOFAZ*	12.5%	Is a crucial factor in combatting oil dependency of the budget and the economy
9	*SOFAZ Balance to Assets Ratio*	12.5%	Plays a substantial role in the long-term macroeconomic stability of the country, and the ability of the Fund to meet its stated objectives
11	*Monthly Distribution of the Executed Revenues and Expenditures*	12.5%	Is an indirect way of judging the effectiveness and transparency of the budget, especially its expenditures

3	*Foreign State Debt to GDP*	10%	Is a decisive factor considering the potential devaluation of the national currency against US Dollar
6	*Public Sector Share in GDP*	10%	Is a vital indicator, but a larger share in some of the years can be attributed to counter-cyclical budget policy
8	*Construction Spending Share*	10%	Is an indirect way of judging the effectiveness of the expenditures. 10% because of lack of evidence to back up the assertions that the state-sponsored construction is always corrupt and bring minimal benefit
4	*Non-oil Revenues to Essential Costs*	5%	Less weight is assigned to mitigate any adverse effects of my personal bias in determining which expenditures to include in the essential costs
5	*Counter-cyclicity of the budget policy*	5%	The used approach only examines expenditures and does not take the revenue side into account, which can also be used for counter-cyclical fiscal policy
7	*GDP Forecast Accuracy*	5%	Even with the most skilled analysts, economic forecasts can end up being unreliable
10	*Executed Figure Variation*	5%	There can be adequate reasons for the variation in some of the years

In the table below, you can see brief statistics of the eleven indicators. The last row shows if the formula of the Z value is negated.

Indicator Name	Balance to GDP	Share of Transfers	Foreign State Debt to GDP	Non-oil Revenues to Essential Costs	Counter-cyclicity of budget policy	Public Sector Share in GDP
Indicator Number	1	2	3	4	5	6
Minimum	-2.39%	36.93%	7.40%	35.01%	-18.50%	25.01%
Maximum	0.85%	58.22%	22.80%	58.56%	15.70%	36.47%
Average	-0.44%	49.76%	14.70%	46.46%	2.28%	30.50%
Median	-0.41%	49.43%	18.90%	49.64%	1.50%	29.82%
St. Deviation	0.87%	6.14%	6.18%	8.20%	9.18%	2.93%
Weight	12.5%	12.5%	10%	5%	5%	10%
Z Negated	No	Yes	Yes	No	No	Yes

Indicator Name	GDP Forecast Accuracy	Construction Spending Share	SOFAZ Balance to Assets	Executed Figure Variation	Monthly Distribution
Indicator Number	7	8	9	10	11
Minimum	0.00%	15.13%	-4.26%	5.14%	1.40%
Maximum	6.30%	38.00%	36.68%	50.70%	5.45%
Average	1.92%	27.39%	9.19%	13.52%	2.95%
Median	0.90%	28.04%	8.98%	7.13%	2.41%
St. Deviation	1.93%	8.31%	11.82%	13.39%	1.41%
Weight	5%	10%	12.5%	5%	12.5%
Z Negated	Yes	Yes	No	Yes	Yes

III. Results & Interpretation

Calculating the results led to interesting insights. From the table below, you can see the Z scores of each year and the final values.

Indicator	1	2	3	4	5	6	7	8	9	10	11	Final[2]	
2010	1.48	-0.34	1.18	-0.80	NA	0.95	NA	-1.11	2.33	0.63	-1.39	34	
2011	-0.05	-1.23	1.15	-1.30	NA	0.32	NA	-1.28	1.39	-2.78	-1.78	-9	**Oil**
2012	0.78	-1.23	1.04	-1.40	0.32	-0.45	-0.72	-0.69	0.20	0.48	0.25	-8	**Boom**
2013	1.20	-1.38	1.05	-1.22	-0.56	-0.82	0.84	-1.05	-0.39	0.61	0.87	-6	**Period**
2014	0.01	-0.16	0.99	-0.33	0.58	-0.41	-0.14	-0.73	-0.02	0.48	0.41	4	
2015	0.01	0.54	-0.83	0.68	-0.08	-0.75	-0.61	-0.08	-1.14	-0.93	0.81	-18	
2016	0.15	1.02	-0.92	1.06	1.46	0.38	-2.27	1.48	-0.72	0.41	-1.50	0	**Post**
2017	-1.14	2.09	-1.31	1.48	-2.26	1.87	0.63	1.46	-0.62	0.58	1.09	40	**Crash**
2018	0.29	0.18	-0.70	0.39	0.95	0.72	1.00	0.62	0.02	-0.46	0.82	32	**Period**
2019	0.32	0.46	-0.68	0.97	-0.24	0.23	0.53	0.24	0.08	0.45	0.38	22	
2020	-2.13	0.05	-0.97	0.48	-0.16	-2.04	0.74	1.13	-1.13	0.54	0.02	-51	

We see from the final values that Azerbaijan's budgetary policymaking performance has gone up and down throughout the past eleven years. The notable points are the high starting point in 2010, rebounds in 2016 & 2019, and the slump of 2020.

When we look at the individual timeline of each indicator, we can see that the results are divided into two groups: 2010 – 2014 and 2015 – 2020.

These groups have opposing signs on most of the indicators, meaning that if an indicator had negative Z values for 2010 – 2014, it tends to be positive for 2015 – 2020. This phenomenon can evidently be seen from the table below, which averages each indicator's value based on Oil Boom (2010 – 2014) and Post Crash (2015 – 2020) periods.

Indicator	1	2	3	4	5	6	7	8	9	10	11
Oil Boom	0.68	-0.87	1.08	-1.01	0.11	-0.08	-0.01	-0.97	0.70	-0.12	-0.33
Post Crash	-0.42	0.72	-0.90	0.84	-0.06	0.07	0.00	0.81	-0.58	0.10	0.27

The Oil Boom period is characterized by the following:

- Better budget balance to GDP ratio, averaging at 0.12% surplus.
- Better performance of State Oil Fund, with 17% average savings. Noteworthy here are the savings ratios of 2010 and 2011, 37% and 26% respectively.
- Foreign state debt constituting a smaller chunk of the Azerbaijani economy due to the strong exchange rate of the national currency.

[2] After calculating the final numbers, I multiplied the final values by 100 to make them easier to read.

- Colossal construction spending. In this period, construction expenses on average accounted for a massive 1/3 of total spending.
- Vast variation in the monthly distribution of budget execution. In 2010, 29% of total expenditures were spent in December alone, giving us clues of massive corruption schemes.
- More central role for the SOFAZ transfers, as they constituted more than half of total budget revenues.

Compared to the Oil Boom period, the Post Crash period improved a couple of things. Among these are:

- Share of transfers accounting for a smaller portion of the total revenues, averaging at 45%. Notable years are 2016 (43.5%) and 2017 (36.9%).
- Improving on non-oil revenues to essential cost ratio, both due to increased non-oil revenues and decreasing the non-essential costs, especially construction.
- Construction spending averaging at 21% of total expenditures, quite lower than the same indicator of the Oil Boom period.
- Monthly distribution of budget execution being more equally divided, albeit this indicator has persistently gotten worse since 2016 and as of 2020 is getting close to the average of the Oil Boom period.

On the other hand, some of the indicators had worse values for the Post Crash period:

- Budget deficit has become a norm in the Post Crash period, as all 6 years in 2015 – 2020 had expenditures surpassing revenues. Particularly noteworthy here are the years 2017 and 2020.
- Foreign state debt to GDP ratio reached double digits numbers with the devaluations of 2015 and stayed at 19 – 23% range ever since.
- State Oil Fund's budget had deficits for the first time in its existence in 2015 and 2020, following the oil price plunges.

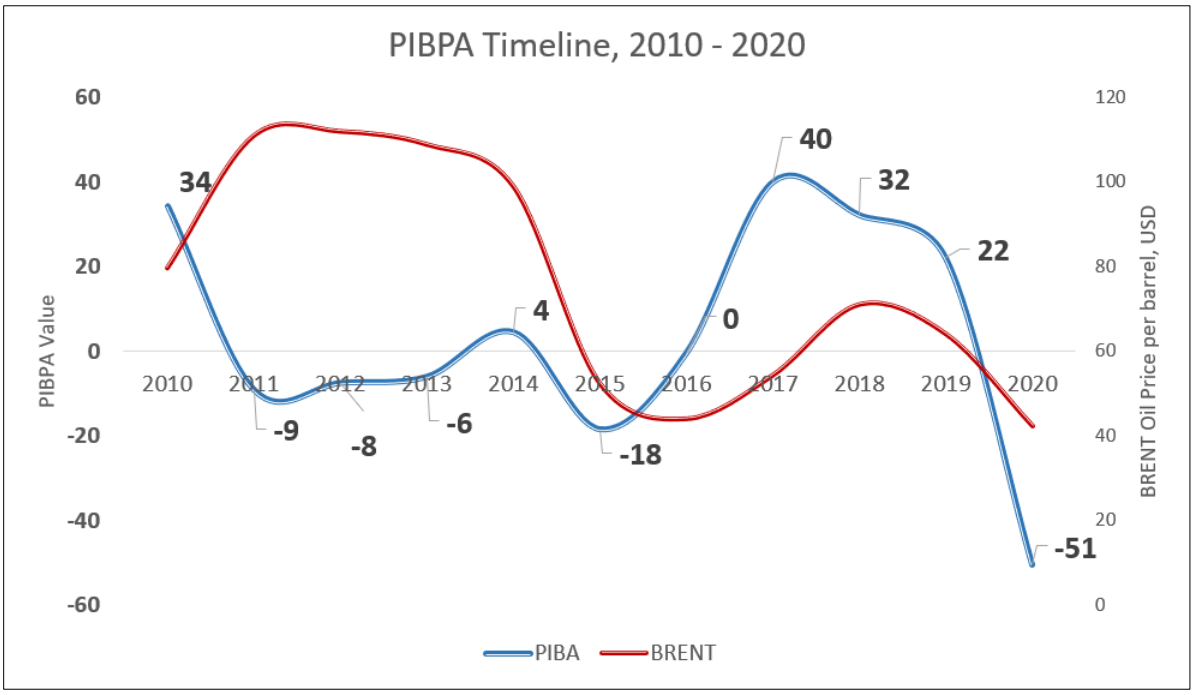
There were also four indicators where the difference between the Oil Boom and Post Crash periods was insignificant. These are the following:

- Counter-cyclicity of budget policy: there is simply no sense of direction in this indicator. In 2016 it improved but then had its worst value the next year.
- Public sector share in GDP: The Post Crash period had two contradicting extreme values in this indicator. In 2017, the public expenditures to GDP ratio decreased as far as 25%. In 2020, on the other hand, it reached 36%. These two values are the lowest and the highest of the entire dataset, separated by only 2 years between them.

- GDP growth forecast accuracy: When we compare the average value of the two periods, there is almost no change. However, if we exclude 2015 and 2016 from the Post Crash period, then the average indicator improves significantly.
- Executed figure variation: Although improved slightly, there is still a big variation between the approved and executed budget figures.

IV. Timeline of Azerbaijan's Budget Policy

In this section, I am going to analyze the timeline of the PIBPA. From the graph below, you can see the dynamics of PIBPA (primary vertical axis) and crude oil prices (secondary vertical axis).



2010: A Decent Start

When compared to the years that came after, the year 2010 seems like a good point for Azerbaijan's budgetary policymaking. Among the main positive things, we need to recognize the budget balance (surplus of 0.85% of GDP), low levels of foreign debt (only 7.4%), the acceptable level of public sector share in GDP (28%), sizable savings by SOFAZ (balance to assets = 37%) and small variation in executed figures (5.1%). On the other hand, some problems, which will become more acute in the subsequent years, are already there: low non-oil revenues, growing construction spending, and large variation in the monthly distribution of budget execution.

2011 – 2014: Incompetent Budget-making

2011 – 2014 years can be considered the worst period of Azerbaijan's budgetary policymaking and paved the ground for much of the country's continued economic hardships. When the average price of BRENT crude oil was 108 USD per barrel in 2011 – 2014, instead of managing the windfall oil revenues responsibly, the government went on a rampant spending spree. Transfers from State Oil Fund to the budget hiked by **60%** in 2011 alone (from 5.9 billion to 9 billion AZN). Economic growth was being fueled by double-digit real expenditure growth each year, mostly going to the extravagant infrastructure projects, and ever-increasing the share of the public sector in the economy. All these economic missteps inevitably set the stage for what was about to come.

One fact sums up the level of ineptitude in budget-making of these years: in the year 2011 when the price of crude oil peaked and averaged at 111 USD, Azerbaijan's state budget had a **deficit of 300 million AZN**. By 2013, the Oil Fund was **only saving 10%** of its annual revenues (the same indicator was **51% in 2010**), in defiance of historically high oil prices.

2015: The Collapse

2015 was a bitter year of truth for Azerbaijan. The State Oil Fund and the Central Bank could no longer support the overvalued national currency on the back of plunging oil prices and had to resort to devaluation. The results were severe. Cost-push inflation soared. Rising foreign debt, deficit in the state budget, and deficit in SOFAZ budget (for the first time in its existence) were just the beginning. The trauma of devaluation undermined economic confidence. Several banks collapsed, leaving the financial sector crippled, which only stabilized after government intervention. 2015 evidently demonstrated how the incompetent fiscal policy of the previous years made Azerbaijan exceedingly vulnerable to oil price fluctuations.

When we look at the PIBPA, we see that the value of 2015 is lower than the 2011 – 2014 period, but do not let that confuse you. Much of the negative developments of 2015 are due to years of accrued problems and unsustainable policies pursued in the previous years. The bubble was burst with the slumping oil prices in 2015.

2016 – 2017: A Hopeful Turn

With these troubles arising, the government announced plenty of plans, strategies, and road maps in 2016 to reverse the trend and ensure that no such thing happens again. The new strategies called for economic liberalization, increased transparency, heightened exports, less import dependency (especially in production), combatting oil reliance, and so on. This new sense of direction (although short-lived) certainly affected the budgetary policy positively, and

consequently rose the PIBPA of 2016. The budget deficit got smaller, the share of SOFAZ transfers decreased down to 43%, construction expenditures experienced their lowest point since the oil boom at 15% of total expenditures, the State Oil Fund's budget had a small surplus (despite low oil prices), and non-oil revenues were on the rise. Due to all these developments, Azerbaijan's PIBPA rebounded from -18 to 0. Note that even with all these, two problems remained. First, the monthly distribution of executed budget was once again heavily skewed towards the end of the year. Secondly, the GDP growth forecasts of the Ministry of Economy turned out to be extremely wrong (3.4% growth forecast vs -3.1% actual).

The year 2017 was an exceptional year for Azerbaijan's fiscal policy. Building on the progressive developments of 2016, the Ministry of Finance announced that the country would follow a tight monetary and fiscal policy. The budget project ambitiously called for steadily declining SOFAZ transfers year-by-year, constraining the foreign state debt (particularly those obtained by State-Owned Enterprises), and adopting a new economic model that instead of state investment, relied on the private non-oil sector for growth. The transfers from SOFAZ **decreased by 20**% compared to 2016, the largest decline ever. The revenues and expenditures of the budget were set to be **reduced by 9% and 6.5%.** Construction spending was unchanged from its low levels in 2016. The monthly distribution of expenditures and revenues were far more equally distributed, with an average standard deviation of **only 1.4%** (for reference, it was 5.1% in 2016). As a corollary of all these improvements, the Performance Index had the biggest jump and reached the maximum value of the period that I analyzed – **40**.

In spite of all these positive steps, the government backtracked on its policy of fiscal consolidation. Despite arguing in 2017 that this policy would continue for 3 more years (Budget Project 2017, Page 9), it got "canceled" in mid-2017 when the budget was amended. With the revision, the government went back to its previous unsustainable policies. Numbers did not vary much with the amendments in 2017 (expenditures were heightened by 5.4%), but the rhetoric was completely reversed. It signaled that the next year's budget will not be built upon principles of fiscal consolidation. According to my alternative calculations, the PIBPA index for 2017 could have been as high as **49** if the government did not amend the budget in June.

2018 – 2019: There and Back Again

With the rising oil prices in late 2017, all the road maps, strategic plans, decreasing transfers, and the talks of tight fiscal policy got abandoned. Instead, the new budget included a massive surge in revenues (**36% increase**, fueled by SOFAZ transfers) and expenditures (**29.2% increase**). The transfers from SOFAZ in 2018 were **80% higher**, reaching 10.9 billion from its previous 6.1 billion AZN. Construction spending **almost doubled** in a single year**.** The share of non-oil revenues declined. It was now clear that the Azerbaijani government went back to its old and

injurious habits only two years after the oil crash and devaluations of 2015. This new direction in 2018 frustrated me so much that it persuaded me to start my blog and write my first-ever post on the subject (which shares the same name as this section – "There and Back Again"). In contempt of having the third-highest PIBPA value, from the perspective of budgetary policy, I regard 2018 as a negative year, as it retraced some of the "gains" made in 2017.

The budgetary policymaking was not modified much in the year 2019 compared to 2018 and continued its downward trend. Thanks to steadily increasing budget expenditures, the public sector share in the total economy once again **reached 30%** for the first time since the devaluations. The monthly distribution of budget execution, which improved extensively in 2017, started to roll back and reached its pre-devaluation values. Transfers from SOFAZ rose by 7%. Construction expenditures rose by **22.5%** and reached their all-time high of **6.2 billion AZN** (for reference, this amount is equal to the spending for Education, Healthcare, Social Protection, and Agriculture in 2019 **combined**). The few positive things in this year, primarily the rising non-oil revenues, were not enough to compensate for all the adverse developments and as such, the PIBPA value continued to bleed.

2020 – The Pandemic

The year 2020 would prove to be one that will be long remembered for the world, as we started battling the still-ongoing coronavirus pandemic. The virus deteriorated the economic indicators of all countries. Coupled with the historically low oil prices, the effect of coronavirus on Azerbaijan was severe.

The executed budget of 2020 had a deficit of **2.39% of GDP**. To compensate for the lost revenues from the non-oil sector, the government heightened the SOFAZ transfers to **12.2 billion AZN**. In spite of the 8.2% hike in government expenditures, the GDP of Azerbaijan shrank by 4.3%. Naturally, all these factors undermined Azerbaijan's budgetary performance. Indicators such as budget balance to GDP (due to rising deficit and shrinking GDP), non-oil revenues to essential expenditures (due to declined non-oil revenues), public sector share in GDP (due to rising expenditures and shrinking GDP), and SOFAZ balance to assets (due to historically low oil prices) all understandably slumped. One declining indicator that I struggle to explain is the monthly distribution of budget execution. Interestingly, the standard deviation reached its second-highest point (**2.9%**) since 2011, giving us clues of the vast inefficiency of expenditures once again.

Because of all the factors mentioned above, the PIBPA in 2020 fell to its lowest point of **-51**. Nonetheless, we should not interpret this number on its face value, but rather consider the extraordinary economic circumstances that led to it. Surely the government could have taken

some steps to reduce the decline in PIBPA (such as ensuring more efficiency of spending and hence improving the monthly distribution indicator), but the fall was inevitable, given the global macroeconomic climate of the time.

2021 and Onward

The year 2021 will be an interesting one to judge once the information on budget execution is made available. The recovering oil prices and the initial economic shock of the pandemic being gone will surely affect various indicators positively. On the other hand, it is hard to forecast what will happen to most of the indicators as they heavily depend on the actions of the government.

The year 2020 once again demonstrated how dangerous reliance on oil is. Similar to the immediate years after the 2015 oil crash, we can expect certain improvements in 2021. If the government has learned its lesson, it will not repeat the same mistakes that it did in 2018 – 2019. On the other hand, we have seen that the Azerbaijani government switches to unsustainable practices as soon as oil prices recover. Thus, the strong rebound of oil prices in 2021, and their continued bullish outlook eminently jeopardize the likelihood of responsible policy action.

V. Final Grades

As we discussed above, the external macroeconomic climate, as well as the failure of the eleven indicators to capture certain developments led to my decision to include a qualitative assessment in the final grade as well. The table below demonstrates the initial grades obtained from the quantitative results of PIBPA.

PIBPA Range	Grade
Less than 0	**F**
[0 – 40)	**D**
[40 – 70)	**C**
[70 – 90)	**B**
Above 90	**A**

Once we have these grades, I then take the qualitative analysis (written above in Section IV) into account and make appropriate adjustments. To limit my direct influence on the final grade, I can only move the final grade by one unit in either direction. For example, if the quantitative analysis yields a C-, at maximum I can alter it to D- or B-.

Year	PIBPA	Quant Grade	Final Grade	Explanation for Adjustment
2010	**34**	**D+**	**C-**	Relatively good PIBPA accompanied by above-average oil prices
2011	**-9**	**F**	**F**	Appalling performance of the budget despite peaking oil prices
2012	**-8**	**F**	**F**	Appalling performance of the budget despite peaking oil prices
2013	**-6**	**F**	**F**	Appalling performance of the budget despite peaking oil prices
2014	**4**	**D-**	**D-**	PIBPA score accurately describes the situation, felt no need to adjust
2015	**-18**	**F**	**D-**	Oil Crash and Devaluations played a significant role in deteriorating PIBPA
2016	**0**	**D-**	**D**	The government seemed to change the course of budget policy for the better
2017	**40**	**C-**	**C+**	Good PIBPA despite negative short-term effects of the policy of fiscal consolidation
2018	**32**	**D+**	**D**	Regardless of the PIBPA, the government returned to expansionist policies
2019	**22**	**D**	**D-**	Continued downward trend and repeating the same mistakes of the pre-crash era
2020	**-51**	**F**	**D-**	The significant negative external effect of coronavirus pandemic

VI. Shortcomings and Future of PIBPA

I have worked extensively on this methodology to make it as adequate and representative as possible. However, the subject of the matter is vast and complicated, which increases the chance of mistakes and not recognizing potential flaws.

I recognize that the following deficiencies currently exist here:

- One of the indicators being the counter-cyclicality of budget expenditures contradicts with some other indicators. For example, if an expansionary fiscal policy is pursued in times of slowing economic growth (as dictated by the logic of countercyclical policy), then this will naturally lead to (a) worsening of the budget balance, (b) increasing public sector share, (c) and possibly raise the share of transfers and foreign debt. The quantitative methodology in its current form fails to acknowledge and account for that.

- As mentioned above, the performance of the state budget, as well as the overall economy in Azerbaijan depends heavily on the oil prices. This means that in years of hiking oil prices, the PIBPA index rises accordingly, in contempt of the fundamental budgetary policymaking not improving. Conversely, in years with slumping oil prices, the vice-versa happens. This is an undesirable characteristic of the current PIBPA, considering that the goal of this index is not about annual economic results, but rather assessing the adequacy of budget policy.

To partially counter the above-mentioned shortcomings, I have adjusted the final grades (In Section V) with a brief qualitative analysis that incorporates oil prices, pandemics, and the shift to fiscal consolidation. Yet this is not a satisfactory solution.

In the future, before the budget execution of 2021 is publicized in June, I plan to update this methodology, and re-do the calculations to better assess the budgetary policy performance.

If you have any feedback, comments, or criticism about this methodology, I kindly ask you to contact me so that I can continue to develop PIBPA. I also take this opportunity to thank Ms. Samira Gasimova for her outstanding feedback which substantially helped me.

I plan to dedicate a separate page of the blog to PIBPA alone so that it is easier to reach.

VII. Data Sources

All the data used in these calculations has been gathered by me from sources shown in the table below. Be noted that some of the statistics are only partially available in English. If you wish to access the full data that I have used, you need to convert the language of the websites into Azerbaijani.

Data	Source
Executed Revenues Executed Expenditures Spending Classification	*Ministry of Finance – Laws on State Budget Execution*
Approved Revenues Approved Expenditures Amended Figures	*Ministry of Finance – Laws and Decrees on State Budget*
Forecasted Inflation Forecasted GDP Growth Planned Expenditure Growth Executed Non-Oil Revenues	*Ministry of Finance – Presentation of Budget Projects*
State Debt	*Ministry of Finance – Information about Foreign Government Debt*
Gross Domestic Product (GDP) Non-oil GDP Inflation	*Central Bank of Azerbaijan – Main Macroeconomic Indicators*
Average Exchange Rate of AZN	*Central Bank of Azerbaijan – Official Average Exchange Rates of Manat*
Monthly Budget Revenues Monthly Budget Expenditures	*State Statistics Committee – Monthly Macroeconomic Indicators*
All SOFAZ data	*State Oil Fund of Azerbaijan – Quarterly Statements*
Oil Prices	*World Bank – Pink Sheet Data*

The state budget projects for the years 2010 and 2011 are not uploaded to the Ministry of Finance's website. Even with many attempts, I could not obtain them from the Ministry. Therefore, for those years, the annual index is calculated without taking indicator 5 (counter-cyclicity of budget policy) and indicator 7 (GDP forecast accuracy) into account. Accordingly, their respective weights in the index have been redistributed equally among the nine remaining indicators of 2010 – 2011.

Furthermore, for some strange reason, the state budget projects of 2016 and 2018 do not include the inflation forecasts. I, therefore, had to use 4% (close to the average of the rest of the years) when calculating the real planned growth of expenditures in indicator 5 – counter-cyclicity of budget policy.